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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/733,146 | 12/11/2003 | Kenneth George Maclean | TI-36584 | 7385 |
| 23494 7590 11/20/2007 TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265 | | | EXAMINER WENDELL, ANDREW | |
| | | | ART UNIT 2618 | PAPER NUMBER |
| | | | NOTIFICATION DATE 11/20/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/733,146

Applicant(s)

MACLEAN ET AL.

Examiner

Andrew Wendell

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 7-8, 14-19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Marshall et al. (US Pat Pub# 2002/0049041).

Regarding claim 1, Marshall teaches a transceiver (Figs. 3 and 4) comprising a receiver 106 (Figs. 3 and 4) coupled to receive a signal at a first node, the receiver establishing a desired common mode voltage at the first node (between 114 and 110, Figs. 3 and 4); circuitry 104 or 112 (Figs. 3 and 4) coupled to establish the desired common mode voltage at a second node (between 112 and 108, Figs. 3 and 4); and the first and second nodes defining at least a portion of a low impedance path during a first operating mode for diverting a signal received at the first node away from the receiver (Fig. 3, transmit mode), and the first and second nodes defining a high impedance path during a second operating mode for enabling the signal received at the first node to be provided to the receiver (Fig. 4, receive mode).

Regarding claim 7, Marshall teaches a transmitter 104 (Figs. 3 and 4) coupled to provide a transmitter output signal at a third node.

Regarding claim 8, Marshall teaches an antenna 102 (Figs. 3 and 4) connected between the first and third nodes.

Regarding claim 14, apparatus claim 14 is rejected for the same reason as apparatus claim 1 since the recited elements would perform the claimed steps.

Regarding claim 15, Marshall teaches means for diverting electrical current away from the first node during the first operating mode (Fig. 3, transmit mode).

Regarding claim 16, Marshall teaches means for diverting electrical current comprising a low impedance path coupled to the second node (Fig. 4, receive mode).

Regarding claim 17, Marshall teaches means for providing a transmission signal 104 (Fig. 3) at a third node; and antenna means 102 (Fig. 3) for broadcasting the transmission signal during the first operating mode and for receiving signals from free space during the second operating mode (Fig. 3, transmit mode), the antenna means being coupled between first node and the second node (Fig. 3).

Regarding claim 18, method claim 18 is rejected for the same reason as apparatus claims 1 and 14 since the recited elements would perform the claimed steps.

Regarding claim 19, Marshall teaches during the transmit operating mode 104 (Fig. 3), further comprising providing a transmission signal to a third node, an antenna 102 (Fig. 3) being coupled between the first and third nodes so that the transmission signal is provided to the low impedance path and away from the first node (Fig. 3, transmit mode).

Regarding claim 21, Marshall teaches detecting a signal received at an antenna coupled to the first node (Fig. 4).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al. (US Pat Pub# 2002/0049041).

Regarding claim 3, Marshall teaches the limitations in claims 1 and 2. Marshall fails to teach a controller.

It would be obvious that Marshall teaches a controller coupled to operate the switch 116 (Figs. 3 and 4) based on a selected one of the first and second operating modes because if there was no controller than the switch would not be able to switch states between a transmit mode or receive mode correctly.

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a controller as taught by Marshall into Marshall's transceiver in order to reduce complexity and improve switching (Sections 0005 and 0006).

5. Claims 4-6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al. (US Pat Pub# 2002/0049041) in view of Kim et al. (US Pat Pub# 2006/0256744).

Regarding claim 4, Marshall teaches the limitations in claim 1. Marshall fails to teach a resistor coupled between the first node and the output of an amplifier.

Kim teaches a resistor 508 (Fig. 1) coupled between the first node and the output of the amplifier 502 (Fig. 1).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a resistor coupled between the first node and the output of an amplifier as taught by Kim into Marshall's transceiver in order to improve performance and switching (Section 0008).

Regarding claim 5, the combination including Kim teaches a feedback path 510 (Fig. 1) coupled between an input of the amplifier and the first node to enable the desired common mode voltage to be provided at the first node, the output of the amplifier varying as a function of the signal received at the first node during the second operating mode (Fig. 1).

Regarding claim 6, the combination including Marshall teaches the circuitry further comprising an amplifier having an output that defines the second node and a feedback path between the second node and an input of the amplifier of the circuitry to establish the desired common mode voltage at the second node (Figs. 3 and 4).

Regarding claim 12, the combination including Kim teaches an amplifier having an output; a resistor 508 (Fig. 1) coupled between the first node and the output of the receiver amplifier 502 (Fig. 1); and a feedback path 510 (Fig. 1) coupled between an input of the receiver amplifier and the first node to enable the desired common mode voltage to be provided at the first node, the output of the receiver amplifier changing as a function of a signal received by the antenna during the second operating mode (Fig. 1).

6. Claims 2, 9-11, 13, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al. (US Pat Pub# 2002/0049041) in view of Avasarala et al. (US Pat Pub# 2005/0107043).

Regarding claim 2, Marshall teaches the limitation in claims 1. Marshall fails to teach a switch device connected between the first and second nodes.

Avasarala teaches a switch device 218 (Fig. 2) connected between the first and second nodes (Fig. 2).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a switch device connected between the first and second nodes as taught by Avasarala into Marshall's transceiver in order to reduce interference (Section 0026).

Regarding claim 9, the combination including Avasarala teaches an antenna being configured to define a resonant circuit having a resonant frequency corresponding to the frequency of the transmitter output signal (Sections 0020-0025).

Regarding claim 10, the combination including Avasarala teaches an integrated circuit comprising the transceiver ("Integration of Diversity switch in combination with a T/R Switch for a radio transceiver on a single chip", Title).

Regarding claim 11, Marshall teaches a receiver 106 (Figs. 3 and 4) coupled to receive a signal at a first node, the receiver establishing a desired common mode voltage at the first node (between 114 and 110, Figs. 3 and 4); an amplifier 104 or 106 (Figs. 3 and 4) coupled to establish the desired common mode voltage at a second node (between 112 and 108, Figs. 3 and 4); a switch device 116 (Figs. 3 and 4)

connected between the first and second nodes, the switch device operating to connect the first and second nodes to provide a low impedance path during a first operating mode (Fig. 3, transmit mode), and the switch operating to disconnect the first and second node during a second operating mode (Fig. 4, receive mode); a transmitter 104 (Figs. 3 and 4) that provides a transmitter output signal at a third node (anywhere along 108 of Fig. 3) having a desired carrier frequency; an antenna 102 (Fig. 3) coupled between the first and third nodes; and a low impedance path coupled to the second node for diverting current away from the first node during the first operating mode (Fig. 3). Marshall fails to teach a switch device 116 (Figs. 3 and 4) connected between the first and second nodes.

Avasarala teaches a switch device 218 (Fig. 2) connected between the first and second nodes (Fig. 2).

Regarding claim 13, the combination including Avasarala teaches at least the receiver, the amplifier, the transmitter and the switch comprising an integrated circuit ("Integration of Diversity switch in combination with a T/R Switch for a radio transceiver on a single chip", Title).

Regarding claim 20, the combination including Avasarala teaches sensing the transmission signal and adjusting transmit power of the transmission signal based on the sensed transmission signal (Sections 0020-0025).

Regarding claim 22, the combination including Avasarala teaches detecting the signal by varying an output signal provided at an output of an amplifier as a function the signal received at the antenna while maintaining the common mode voltage at the first

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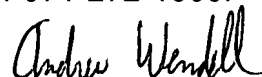
node (Sections 0020-0025), the output of the amplifier being connected to the first node through at least one impedance element (Fig. 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Wendell whose telephone number is 571-272-0557. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Andrew Wendell
Examiner
Art Unit 2618


NAY MAUNG
SUPERVISORY PATENT EXAMINER

11/6/2007